



7-19. (Cancelled)

23. (New) The RAIL system of claim 1, wherein the laser is a 193 nm wavelength ArF laser.

24. (New) The RAIL system of claim 1, wherein the interferometric tool comprises an achromatic interferometric lithography (AIL) tool.

25. (New) The RAIL system of claim 1, wherein the AIL tool is adapted to produce a pattern having 50 nm period gratings and grids, or 25 nm lines and spaces.

26. (New) The RAIL system of claim 21, wherein the pattern has a period that is determined by

$$\text{period} = \frac{\lambda}{2 \sin \theta}$$

where  $\lambda$  is the wavelength of the laser and  $\theta$  is an angle between the normal to the plane of the surface of the rotating stage and one of the two interfering beams.

27. (New) The RAIL system of claim 26, wherein the period is twice a trackpitch of the pattern, wherein the period is measured from a leading edge of one track to a leading edge of another adjacent track.

28. (New) The RAIL system of claim 1, further comprising a wafer with a photoresist.

29. (New) The RAIL system of claim 21, wherein the pattern is a checkerboard pattern.

31. (New) The RAIL system of claim 30, wherein the feature has a size of less than 0.25 micron.